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Descriptions of some Larvae of Lepidoptera, respecting Sphingidae especially.

(Continued from p. 65-79.)

The first volume of the *Species général des Lépidoptères hétérocères*, by Dr. J. A. Boisduval, treats of the Sphingidae, Sesiidae and Castnidae in a systematic and descriptive manner, with scant reference to the descriptive literature, and is accompanied with plates, which have not been examined in the preparation of this article. Larvae of the North American species, genera and other groups of Sphingidae mentioned below are described more or less completely on the pages indicated. In the preparation of these descriptions Dr. Boisduval has been aided principally by the possession of a large number of original and unpublished figures made by Abbot; in addition to these he had some figures made by John Leconte and by other persons. The descriptions of families and tribes are reproduced here, in translation.

SPHINGIDAE. p. 2. "Larvae smooth, cylindrical, elongated, slightly swollen posteriorly, generally furnished with a horn on the segment before the hindmost, or sometimes with a little lenticular shield in place of the horn." "The larvae live solitarily, sometimes on trees or shrubs, sometimes on low plants."

SMERINTHIDAE (tribe). p. 8. Larvae with habits and with horn on eleventh segment as in other Sphingidae; particularly distinguished in most cases by having the head triangular and the skin shagreened or rugose.

- Smerinthus*. p. 17. General description.
- S. populicola*. p. 22-23. This is the *S. modesta* of Harris, the latter name being pre-occupied. Larva not described here.
- S. juglandis*. p. 27. Brief descr. of Abbot's figures.
- S. ophth[al]miceus*. p. 34. Brief descr. by Lorquin.
- S. pavoninus*. p. 37. Brief descr. of Abbot's figure.
- S. excaecatus*. p. 38. Brief descr. from several of Abbot's figures.
- S. geminatus*. p. 39. Descr. [? from figure by Leconte].
- S. astylus*. p. 41. Very imperfect descr. from a coarse figure by Leconte.
- S. myops*. p. 42. Brief descr. from several figures by Abbot and Leconte.
- Ceratonia*. p. 53. General description.
- C. amyntor* [*C. quadricornis*]. p. 54. Descr.
- EURYGLOTTIDAE (tribe). p. 58. Larvae with rounded head; skin smooth, never shagreened. Usually with a horn on eleventh segment, and in most cases with oblique lateral spots.
- Macrosila*. p. 60. General description.
- M. tetrico*. p. 61-62. Good descr. by General Brunet; Poey's figure [see PSYCHE, v. 2, p. 73] commended; a very fine figure by Brunet mentioned. Figured and descr. by Merian (Hist. ins. Surinam, pl. 5) as *Sphinx rustica*.
- Amphonyx*. p. 62. General description.
- A. jatrophae*. p. 65. Very brief descr. from Merian's coarse figure.
- Sphinx*. p. 69. General description.
- S. carolina*. p. 70-71. Brief descr. from Abbot's figures.
- S. lycopersici*. p. 72. Exceedingly brief descr. by Lorquin.
- S. quinque maculata*. p. 76. Descr. from Abbot's figure.
- S. rustica*. p. 83. Brief but perhaps sufficient description. Madam Merian's figure (Hist. ins. Surinam, pl. 5) and description belong to *Macrosila tetrico*.
- S. eremitus*. Refers to Lintner's description [see PSYCHE, v. 2, p. 76.]
- S. kalmiae*. p. 92. Brief descr.
- S. cingulata*. p. 96. Brief descr.

S. drupiferarum. p. 97-98. Descr. by comparison with *S. ligustri* previously described.

S. hylaeus. p. 99. Brief descr. from several figures.

S. plebeja. p. 100. Descr. from a very fine figure by Abbot.

S. cupressi. p. 102-103. Good descr. from a magnificent figure by Abbot.

S. catalpae. p. 103-104. Good descr. from a fine figure by Abbot.

S. conferarum. p. 105-106. Good descr. from several very fine figures by Abbot, which are unlike the figure published in Abb., pl. 42.

S. harrisii. p. 106-107. Brief descr.

S. jasminearum. p. 115. Descr. from a fine figure.

S. brontes. p. 116. Descr. from fine figures.

Anceryx. p. 119. General description.

A. ello. p. 120. Very brief description from Merian's figure [see PSYCHE, v. 2, p. 77].

A. alope. p. 121. Descr. from a very fine figure by General Brunet.

Pachylia. p. 134. General description.

P. ficus. p. 137. Very brief descr., after Merian.

Madoryx. p. 150. General description.

DEILEPHILIDAE (tribe). p. 158. Larvae, as far as known, smooth, with globular head; often ornamented with rather lively colors, and frequently with ocellate spots. Certain larvae, which might constitute a tribe by themselves, have the first three rings more slender than the rest, very retractile, and extensible like a trumpet. Some ordinarily have a horn on the eleventh segment. This horn, the use of which is unknown, is exceptionally replaced, in some species, by a little wart-like plate. In some other species the horn exists only in the earliest stage, and disappears completely from the adults.

Deilephila. p. 158-159. General description.

D. galii [*D. chumaenerii*], p. 170. Brief descr.

D. daucus. p. 174. This is the *D. lineata* of North America, but Boisduval separates it from the *D. lineata* of Europe. Descr. from several of Abbot's figures.

- Philampelus*. p. 192. General description.
- Ph. labruscae*. p. 192. Exceedingly brief descr., after Merian.
- Ph. crantor* [*Ph. achemon*]. p. 200. Good descr., from a very fine figure and a detailed description by Lorquin.
- Ph. jussieaeae*. p. 202-203. Good descr. by Lorquin.
- Everyx*. p. 208. General description.
- E. myron*. p. 210. Good descr.
- E. choerilus*. p. 211. Good descr.
- Eucheryx*. p. 219. General description.
- Choerocampa*. p. 223. General description.
- Ch. tersa*. p. 269. Descr. from several of Abbot's figures.
- MACROGLOSSIDAE (tribe). p. 289. Larvae, as far as known, generally green, more or less rugose-dotted, even sometimes appearing a little shagreened; attenuated anteriorly, with globose head. Generally with a more or less developed straight or curved horn on eleventh segment. Some have longitudinal lines, others have oblique lines also; some have ferruginous lateral spots.
- Epistor*. p. 296. General description of no avail.
- E. lugubris*. p. 297. Brief descr. from figures.
- Pogocolon*. p. 314. General description.
- P. gaurae*. p. 315-316. Good descr. from two figures by Abbot.
- P. nessus*. p. 317. Descr. from fine figure by Abbot.
- Thyreus*. p. 330. Brief general description.
- Th. abbotti*. p. 331-332. Brief descr. from several figures
- Macroglossa*. p. 332. Brief general description.
- M. diffinis*. p. 367. Descr. from figures by Abbot.
- M. thysbe*. p. 370. Descr. from a fine figure by Abbot.
- M. etolus*. p. 370. Descr. from a fine figure by J. Leconte.

In addition to the above-mentioned species and groups of Sphingidae, some description of whose larvae is given, the following species of North American Sphingidae are described without descriptions of their larvae :

- Smerinthus oculata* (Mex.) p. 29, *S. pseudambulyx* (Mex.) p. 29, *S. saliceti* (Mex.) p. 35, *S. cerisyi* (U. S.) p. 35, *S. ja-*

maicensis (Jam.) p. 36, *Amphonyx duponchelii* (Cuba) p. 65, *Sphinx afflicta* (Cuba, Haiti) p. 77, *S. ochus* (Mex., Hond.) p. 82, *S. lugens* (Mex., Hond.) p. 87, *S. andromedae* (Mex., Hond.) p. 89, *S. gordius* (Va.) p. 91, *S. sordida* (U. S.) p. 92, *S. canadensis* (Quebec) p. 93, *S. chersis* [*S. cinerea*] (U. S.) p. 93, *S. strobi* (Cal.) p. 100, *S. sequoiae* (Cal.) p. 101, *S. pinea* (N. Y.) p. 107, *S. lanceolata* (Mex.) p. 109, *S. collaris* (St. Dom., Jam.) p. 110, *S. cubensis* (Cuba) p. 117, *S. sesquiplea* (Mex., Guat.) p. 118, *Anceryx rimosa* (Cuba, Haiti, Braz.) p. 125, *A. merianae* (Nicaragua, Braz.) p. 128, *A. oenotrus* (Antilles, S. A.) p. 129, *A. melancholica* (Haiti, Cuba, Braz.) p. 130, *A. janiphæ* (Haiti) p. 131, *A. rhaebus* (Mex., Hond.) p. 131, *A. obscura* (Antilles) p. 132, *A. gutturalis* (St. Dom.) p. 133, *A. pallida* (Cuba) p. 134, *Pachylia tristis* (Cuba, Braz.) p. 188, *P. inconspicua* (Jam.) p. 138, *Madoryx pseudothyreus* (Cuba) p. 156, *Deilephila calverleyi* (Cuba) p. 168, *Ambulyx rostralis* (Nicaragua, New Granada) p. 184, *A. strigilis* (Antilles, S. A.) p. 186, *Philampelus satellitia* (Antilles) p. 197, *Ph. pandorus* (U. S.) p. 197, *Ph. hornebeckiana* (St. Thomas) p. 201, *Ph. typhon* (Mex.) p. 204, *Everyx astyanor* (Mex.?) p. 211, *E. pholus* (W. I.) p. 212, *Eucheryx licastus* (St. Thomas, Braz.) p. 220, *E. croesus* (Antilles) p. 221, *Choerocampa caicus* (Cuba, S. A.) p. 249, *Ch. ceratomiooides* (Guat., Mex., S. A.) p. 264, *Ch. laevis* (Mex.) p. 265, *Ch. druryi* (Mex.) p. 267, *Ch. robinsonii* (Cuba) p. 269, *Ch. aristor* (Guat., Columbia) p. 270, *Ch. crotonis* (Nicaragua, Columbia) p. 270, *Ch. nechus* (W. I., Antilles) p. 271, *Ch. eumedon* (Mex.) p. 272, *Ch. fugax* (Mex., Hond.) p. 274, *Ch. rhodocera* (St. Dom.) p. 276, *Ch. gundlachii* (Cuba) p. 277, *Ch. irrorata* (Cuba) p. 278, *Ch. porcus* (Haiti, Cuba, Braz.) p. 278, *Ch. ? versicolor* (N. A.) p. 284, *Lapara bombycooides* (Canada) p. 292, *Arctonotus lucidus* (Cal.) p. 293, *Epistor camertus* (Antilles, S. A.) p. 298, *E. danum* (Cuba, Haiti, S. A.) p. 299, *Tricholon inscriptum* (U. S.) p. 302, *Pogocolon clarkiae* (Cal.) p. 316, *Oenosanda noctuiformis* (Antilles) p. 319, *O. spuria* (Mex.) p. 319, *Perigonia caliginosa* (Mex. Hond.) p. 324, *P. lusca* (Cuba, Haiti, S. A.) p. 325, *P. ilus* (Mex., Guat., Antilles) p. 326, *P. iloides* (Cuba)

p. 327, *P. undata* (Jam.) p. 328, *P. glaucescens* (St. Dom.) p. 328, *Macroglossa aedon* (Cuba) p. 357, *M. tantalus* (Antilles, S.? A.) p. 358, *M. sagra* (Cuba, Mex.) p. 360, *M. corvus* (Nicaragua, Columbia) p. 361, *M. phaeton* (Cal.) p. 362, *M. flavofasciata* (Hudson's Bay) p. 364, *M. thetis* (Cal.) p. 368, *M. gracilis* (U. S.) p. 371, *M. ruficaudis* (Canada) p. 371, *M. pyramus* (U. S.) p. 372, *M. fuscicaudis* (Ga.) p. 372. Several unrecognized species are noticed on p. 558.

In the portion of this volume devoted to the Sesiidae and Castnidae, only two species of North American larvae are described by attributing to them any characters additional to those of the family to which they belong. These are *Thyris fenestrina*, on p. 489, and *Th. vitrina*, on p. 490, the latter described from a figure by Abbot. The larvae of both families are characterized alike, as being pale or discolored, almost glabrous, having on their bodies a few very small tubercles, from each of which springs a very fine hair; the back of the first segment and that of the last each is covered with a scaly plate; the mandibles are strong, and the larvae live within the stems of vegetals. They show no trace of a horn on the eleventh segment.

Arctia isabella. Brief descr. in Harr. Ins. Inj. Veg., p. 355, fig.

I am not aware of any other published description. Mr. N. Coleman obtained larvae from eggs, and writes to me of them as follows: "At first they were very dark and as they grew showed quite black. I noticed after a while that a reddish ring appeared on some of them, and further watching showed that every fresh moulting developed a new red ring, till the fifth was reached. As they were kept in a box they did not grow as fast as those at liberty, for I captured full grown ones in the garden, and by the roadside while these were still small. Of the mature ones caught none had over five red rings, though Harris says they have six. In some cases, though not every one, the fifth red ring, reckoning from head back, has only two tufts of red, the rest being black." Harris says: "Hairs on first four and last two rings black, on intermediate rings tan-red." Two specimens in my collection agree with this description; the two others have the lowest tuft on each side of segment 10 red and the rest black; in one of the latter only the lowest tuft on each side of segment 5 is black, in the other the whole of segment 5 is black.

(B. Pickman Mann.)

Euchaetes egle.

Mature larva. Body, legs, and head black, the body covered with long tufts of hair; the hairs on the anterior and posterior segments are black, and the anterior tufts are longer than those on the central segments. Two lateral white tufts or pencils from the breathing holes of the third segment, and two shorter ones from the dorsal part. The dorsal tufts of the central segments are ochre yellow. A double row of short lateral tufts runs the whole length of the body, in the vicinity of the breathing holes; the upper row black, the lower a dirty grey. On the tenth segment these tufts are rather longer and are white. Length 20 mm.; appearance stout.

The description of the larva of *E. collaris*, furnished by Mr. G. H. Van Wagenen to the *Canadian Entomologist*, shows what little ground ever existed for classing *E. collaris* as a variety of *E. egle*. The larvae are so unlike in appearance and habits as to suggest a generic difference.

(*W. V. Andrews*, March 1878.)

Parasa chloris.

A beautiful larva, but difficult to describe. The description in Stretch's admirable work, *Zygaenidae and Bombycidae of N. A.*, is lamentably defective.

Mature. Onisciform, 19 mm. long. Head purplish brown. Four purple and three white lines drawn very close together, form a dorsal band running the length of the body. Subdorsal line bright red, from which arise six red spines (longest on central segments) studded with yellowish red spinelets; between the spines and on the fifth, sixth, eighth and ninth segments, are reddish spiny warts. The spines and warts are on elevated ridges. Beneath the sub-dorsal line are two pairs of purple, longitudinal lines on a yellowish ground; the pairs divided by a red line. The breathers are on a similar red line, and are guarded or ornamented by spiny warts; like those mentioned above. Legs of a sort of yellowish olive color; pro-legs, or rather tubercles, and underside of body of a reddish tinge. Varies considerably; one very beautiful variety has all the red of the typical larva replaced by brimstone yellow. Feeds on the oak (*Quercus*), on the pear tree (*Pyrus*), on wild cherry (*Prunus*), and on the wax myrtle (*Myrica cerifera*), in September. Pupa brown, of a parchmenty consistence, naked, egg-shaped. I have reared hundreds of this beautiful species, and in confinement it always forms its cocoon either adherent to the stem of the food plants, or, occasionally, draws two leaves together for a shelter. Indications are that in nature the cocoon is formed among loose rubbish on the ground.

(*W. V. Andrews*, March 1878.)

Limacodus cippus.

In vol. 7 of *Jardine's Naturalist's Library*, p. 177, is a description of "*Limacodes cippus*, Cram." There are figures of both moth and caterpillar on p. 21, fig. 2. This is said to be a North American insect, and also to be found in Surinam.

Harris, Ins. Inj. Veg., p. 420, speaking of *L. cippus*, and giving a good figure of it, doubts, in a note, whether it be the Surinam *L. cippus*, but gives as its caterpillar one figured by Abbot. But this, from the description, is certainly not the caterpillar of the *L. cippus* figured by Harris. Indeed it seems to be one of the forms of *Parasa chloris*. I hope to be able to give you during the coming season an accurate description of *L. cippus* (the *Euclea querceti* of the G. & R. catalogue), but may say here that it is in shape much like *P. chloris*, a little flatter, and of an uniform rust red color. Certainly neither the moth nor caterpillar of Jardine is like our *L. cippus* = *E. querceti*; and while the drawing and description, in Harris, of the moth are good, that of the caterpillar is very erroneous.

Judging from both moths and caterpillars, *L. chloris* and *E. querceti* ought to be referred to the same genus. (W. V. Andrews, June 1878.)

Datana major.

I have never taken this caterpillar earlier than perhaps the second moult, when its appearance, described below, is very different from that of its mature state. Color, chocolate brown. Head, neck, legs, pro-legs, and anal shield dark coral red. Four bright yellow longitudinal lines alternate with the ground color, that covering the breathers being broadest. Two rows of small yellow spots underneath. Feeds on *Andromeda ligustrina* in Aug. and Sept. N. Y., N. J. (W. V. Andrews, March 1878.)

Anisota stigma.

Mature. Larva cylindrical, 63-69 mm. long, 13 mm. broad. Reddish brown, or bright fawn color, thickly covered with white granulations. Legs and pro-legs nearly concolorous with body. Head of a brighter brown, and shining. Six longitudinal rows of black spines, three on each side of the body (one sub dorsal, one lateral, and one immediately beneath the breathers). Sub-dorsal spines on third segment long. Breathers black, with a rather faint white line running over them. In the early stages all the colors are somewhat lighter. Feeds on *Quercus* in September. Pupa black, rough, with terminal spike.

(W. V. Andrews, March 1878.)

Scolecocampa liburna.

I reared this moth from the larva many years ago, but had forgotten all the details. I am indebted to my friend Mr. G. R. Pilate, of Ohio, for the larvae from which the following description is made.

Length 38 mm., thickness 6 mm. Color, dirty white. Smooth and shining, with a few scattered hairs. Head and anal segment black. Contents of the intestinal canal showing through the skia of the dorsum. On each segment are twelve small black spots, two on each side of the dorsum, and four in the vicinity of the breathers. Legs and pro-legs light brown, the former rather darker than the latter. Feeds on decaying wood. In confinement it fed all the winter, and probably does so under all circumstances. Imago early in June. (W. V. Andrews, June 1878.)

B. Pickman Mann.